

CLAIMS:

- 1 1. A composition comprising:
2 a) a white pigment or extended white pigment surface treated with a silane
3 having at least one functional group capable of reacting with acids and
4 anhydrides;
5 b) at least one polymeric material; and
6 c) a compatibilizer.

- 1 2. The composition of Claim 1 wherein said silane has the following general
2 formula:



- 4 wherein

5 R is a nonhydrolyzable functional group directly or indirectly bonded
6 to the silicon atom selected from the group consisting of epoxy, isocyanato,
7 mercapto, and mixtures thereof;

8 R' is a hydrolyzable group selected from the group consisting of alkoxy,
9 halogen, acetoxy or hydroxy or mixtures thereof; and

10 $x = 1$ to 3 .

- 1 3. The composition of Claim 1 wherein said pigment is TiO_2 .

- 1 4. The composition of Claim 1 wherein said extended white pigment is selected
2 from clays, inorganic metal compounds and siliceous materials.
3

- 1 5. The composition of Claim 1 wherein said compatibilizer comprises copolymers
2 of ethylene or propylene with anhydride or acid groups which are capable of
3 reacting with the functional groups of the at least one polymeric material.

- 1 6. The composition of Claim 1 wherein said compatibilizer comprises copolymers
2 selected from the group consisting of ethylene maleic anhydride copolymers,
3 ethylene (meth)acrylic acid copolymers, propylene maleic anhydride
4 copolymers, propylene acrylic acid copolymers, ethylene propylene
5 copolymers with maleic anhydride or acid functional groups, and olefinic
6 ionomer resins.
- 1 7. The composition of Claim 1 wherein said compatibilizer is present at a
2 concentration of about 0.5wt.% to about 20wt.% based on a total weight of the
3 composition.
- 1 8. The composition of Claim 1 wherein said compatibilizer is present at a
2 concentration of about 1% to about 10% by weight of the total composition.
- 1 9. The composition of Claim 1 wherein said filler or pigment is present at a
2 concentration of about 40wt.% to about 85wt.% based on a total weight of the
3 composition.
- 1 10. The composition of Claim 1 further comprising at least one lubricant selected
2 from the group consisting of polysiloxanes, silicone fluids, stearates, paraffinic
3 oils, fluorocarbon fluids, and mixtures thereof.
- 1 11. The composition of Claim 10 wherein said lubricant is a polysiloxane selected
2 from the group consisting of polydimethylsiloxane and organomodified
3 polydimethylsiloxane.
4
- 1 12. The composition of Claim 13 wherein said lubricant is present from about
2 0.05wt.% to about 5wt.% based on a total weight of the composition.

1 13. The composition of Claim 1 wherein said silane is present on the surface of said
2 pigment or extended white pigment in an amount of about 0.1wt.% to about
3 5wt.% based on a weight of said pigment or extended white pigment.

1 14. The composition of Claim 1 wherein said polymeric material is selected from
2 the group consisting of olefins and alphaolefins and their copolymers and
3 terpolymers, rubbery block copolymers, polyamides, polyesters, vinylic
4 polymers, acrylics, epoxies, ionomeric resins, and mixtures thereof.

1 15. The composition of Claim 14 wherein said polymeric material is selected from
2 the group consisting of polyethylene, ethylene copolymers, polypropylene,
3 propylene copolymers, and mixtures thereof.

1 16. A white pigment surface treated with at least one silane capable of reacting with
2 acids and anhydrides and having the following general structure:



3
4 wherein

5 R is a nonhydrolyzable functional group directly or indirectly bonded
6 to the silicon atom selected from the group consisting of epoxy, isocyanato,
7 mercapto, and mixtures thereof;

8 R' is a hydrolyzable group selected from the group consisting of alkoxy,
9 halogen, acetoxy or hydroxy or mixtures thereof; and

10 $x = 1$ to 3 .

1 17. The white pigment of Claim 16 wherein said white pigment is selected from
2 the group consisting of clays, inorganic metal compounds and siliceous
3 materials.

1 18. The white pigment of Claim 16 wherein said white pigment is selected from
2 the group aluminum trihydroxide, magnesium hydroxide, calcined clay,
3 nanoclay, kaolin clay, oxidized brass, oxidized aluminum, oxidized steel,
4 alumina, aluminum trihydrate, fumed silica, precipitated silica, silica aerogels,
5 silica xerogels, aluminum silicates, calcium magnesium silicates, asbestos,
6 molecular sieves, Wollastonite, calcium carbonate, titanium dioxide, calcium
7 sulphate, magnesium sulfate, calcium carbonates having a silica coating, calcium
8 carbonates agglomerated to silica, and mixtures thereof.

1 19. The white pigment of Claim 16 wherein said white pigment is TiO_2 .

1 20. A white pigment or extended white pigment having enhanced processability
2 and dispersion in polymeric material surface treated with a silane having a
3 structure of:



5 wherein

6 R is a nonhydrolyzable functional group directly or indirectly bonded
7 to the silicon atom selected from the group consisting of epoxy, isocyanato,
8 mercapto, and mixtures thereof;

9 R' is a hydrolyzable group selected from the group consisting of alkoxy,
10 halogen, acetoxy or hydroxy or mixtures thereof; and

11 $x = 1$ to 3 ; and

12 a polysiloxane having a structure of:



14 wherein

15 R'' is an organic or an inorganic group;

16 n is 0 to 3 ; and

17 m is equal to or greater than 2 .